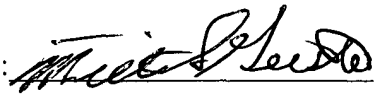
REMARKS

The present amendment has been submitted in order to correct minor errors, and in order to amend the claims and add new claims.

Respectfully submitted,

By: 

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

IN THE SPECIFICATION:

Page 13, second paragraph, replace line 4 through the last line, with the following:

-- Suitable sources of cellulose fiber that may be used include cotton linters and wood pulp, such as hardwood and softwood. The cotton linters, at a low contamination level, are preferred. The fibers and any desired fillers, such as talc, diatomaceous earth, friction particles, or [CMP polishing slurry such as] colloidal silica, may be added to the pulper with deionized water and completely blended. In some cases, fillers are not used in the material. Once the fibers and fillers are completely blended, a latex emulsion is then added to the pulper and completely blended into the slurry. The latex content has been varied between 5% and 75% of the entire dry material weight. Latex in the lower addition range is currently preferred. The latex is then precipitated onto the fibers by adding papermakers' alum or a cationic polymer. The use of a cationic polymer is, however, preferred.. The latex and fibers are usually negatively charged; therefore, the addition of a cationic ion forms a bridge between latex and fiber and also allows the latex to precipitate or coagulate together, thus coating the fibers and fillers. The slurry is then pumped or gravity-dropped to a stock tank where it is diluted with additional deionized water. The amount of this dilution is system-dependent. If required, additional chemicals that give the material wet strength and/or protection against water are added to the stock tank or in-line before the headbox. Chemicals used may include wet strength resins and sizing agents. The addition of chemicals and the type of chemicals used depend on the end use of the pad. Various types of semiconductor CMP processes require different pad properties. --.

IN THE CLAIMS:

CLAIM 1(AMENDED). A polishing pad for use in chemical mechanical polishing of substrates, said polishing pad having a polishing surface, comprising:

a paper-making wet-laid process fibrous matrix consisting of [porous] cellulosic fibers;

a binder for binding said fibrous matrix, said binder consisting of thermoset resin [material];

said fibrous matrix and said binder forming a porous structure by which polishing slurry and polishing debris during chemical mechanical polishing of substrates are temporarily stored for subsequent rinsing away, and for enhanced flow-distribution of the polishing slurry.

CLAIM 2(AMENDED). The polishing pad according to claim 1, said polishing pad being used in chemical mechanical polishing of substrates, wherein [said fibrous matrix consists of cellulose fibers, and] said thermoset resin [material] consists of phenolic resin for binding said [cellulose] cellulosic fibers.

CLAIM 3(AMENDED). The polishing pad according to claim 1, said polishing pad being used in chemical mechanical polishing of substrates, wherein said fibrous matrix consists of at least one of: cellulose fibers, lyocell and "ARAMID" , and said thermoset resin [material] consists of at least one of the following: Phenolic resin, epoxy, silicone, for binding said fibers.

CLAIM 4(AMENDED). The polishing pad for use in chemical mechanical polishing of substrates according to claim 1 [2], wherein said [cellulose fibrous matrix is derived] cellulosic fibers are chosen from the group consisting [from of at least one] of: Cotton linters and wood pulp.

CLAIM 14(AMENDED). The polishing pad for use in chemical mechanical polishing of substrates according to claim [13] 3, wherein said fibrous matrix is comprised of fibers having cross-sectional diameters of between 10 and 50 microns, and a length in the range of between .4 and 1.3mm.

CLAIM 18(AMENDED). In a [method of forming a] fiber matrix used [to serve] as a medium for subsequent resin impregnation, for use [as a] in making polishing [pad] pads for use in chemical-mechanical process apparatuses for the chemical-mechanical polishing of substrates, the improvement comprising:

said fiber matrix being made by a paper-making wet-laid process comprising the following steps:

(i) dispersing paper-making cellulosic fibers in water to form a paper-making slurry;

(j) [forming a fiber matrix by a wet-laid process] delivering the paper-making slurry of said step (a) to a paper-making machine and making a paper sheet in said paper-making machine;

(k) [said wet-laid process comprising] said step (b) comprising draining water from the slurry [by gravity and/or vacuum drainage] to form a continuous paper sheet;

(l) drying the [wet fiber matrix] wet-laid continuous paper sheet of said step (c) for creating a relatively soft, compliant fiber [mat] matrix from which [a] polishing pads for use in chemical mechanical polishing of substrates are formed.

CLAIM 23(AMENDED). A method of forming [a] polishing [pad] pads for use in chemical mechanical polishing of substrates, comprising:

(e) forming a fiber matrix sheet made of paper-making fibers on a paper-making machine;

(f) [binding] impregnating the fiber matrix sheet with a binder material;

(g) curing the binder material with heat to form a fiber matrix sheet [mat] that is relatively soft and compliant[.] ;

(h) said step (b) comprising binding the fiber matrix with a thermoset resin.

CLAIM 24(AMENDED). The method according to claim 23, wherein said step (d) comprises using a binder from at least one of the following: phenolic, epoxy, silicone, and modified phenolics [.ethod as in claim 13], wherein [the resin impregnation process] said step (b) is done by soaking the fiber [mat] matrix sheet in a bath of liquid resin.

CLAIM 27(AMENDED). The method according to claim 23, further comprising forming a grooved-surface pattern in the surface of the fiber [mat] matrix sheet.

CLAIM 28(AMENDED). The method according to claim [28] 27, wherein said step of forming a grooved -surface pattern is performed after the thermoset resin is fully cured.

CLAIM 29(AMENDED). The method according to claim 28, wherein said step of forming a grooved -surface pattern [is] comprises embossing the grooved-surface pattern.

CLAIM 32(AMENDED). In a chemical mechanical polishing apparatus for the polishing of substrates, which apparatus comprises a rotating platen, a polishing pad, having a polishing surface, attached to said rotating platen, an upper rotating member for retaining a wafer carrier for a wafer substrate, slurry means for introducing slurry onto the polishing pad , the improvement comprising:

said polishing pad being of a porous structure and comprising a fibrous matrix consisting of [porous] paper-making fibers, said fibrous matrix consisting of a paper-machine produced paper sheet bound with a thermoset resin material; said polishing pad comprising voids in which said polishing slurry flows during chemical mechanical polishing of substrates and in which debris formed during the chemical mechanical polishing of substrates are temporarily stored.

CLAIM 40(AMENDED). The chemical mechanical polishing apparatus for the polishing of substrates according to claim 32, wherein said fibrous matrix is comprised of fibers having cross-sectional diameters of between 10 and 50 microns, and a length in

the range of between .4 and 1.3mm[.]; said fibrous matrix making up between 30-80%, by weight, of said polishing pad.

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